



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D407-667-105
Job Sheet 186544



Part No: D407-667-105

Job Qty: 1 pcs

Part Name: Fwd Crosstube - High 407



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/16/18

Job Tracking No:

Due Date: 12/14/18

Created By: Jesse White

Type: Stock

Description: SIOP

Note: DWG D407-667-145 REV.D / IIN-D206-667 REV.D IPP Rev:F 05.09.01 Add holes for comp. w/ Bell Skids
KJ/JLM IPP Rev:G 08-05-16 chg QC6 to QC15 DD ver:EC IPP Rev:H 08-06-03 update per DSI9415
(ECN1198) DD ver:ec IPP Rev:I 08-07-14 add (scribe inside of tube) seq.6 DD ver:EC IPP Rev:J 08-07-28
update per (par 08-013) DD ver:E IPP Rev K 09.01.06 ECN 08-562 EC ver:DD IPP REV:L 11.08.05 PER
ECN 11-615 DD VERF:EC IPP REV.. 12.08.20 DSI9628 revA (ECN12-631) DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup	Run	Workcenter / Supplier	Lead Time	
110	Packaging 1 - Pick Kit	1 pcs		12/14/18	0.00	0.00	Packaging 1 - 1 - B4B		
							Packaging 1 - 2 - B4B		
							Packaging 1 - 3 - B4B		
							Packaging 1 - 4 - B4B		
							Packaging 1 - 5 - B4B		
							Packaging 1 - 6 - B4B		
							Packaging 1 - 7 - B4B		
							Packaging 1 - 8 - B4B		
							Packaging 1 - 9 - B4B		
							Packaging 1 - 10 - B4B		
							Packaging 1 - 11 - B4B		
							Packaging 1 - 12 - B4B		
							Packaging 1 - 13 - B4B		
							Packaging 1 - 14 - B4B		
							Packaging 1 - 15 - B4B		
							Packaging 1 - 16 - B4B		
							Packaging 1 - 17 - B4B		
							Packaging 1 - 18 - B4B		
							Packaging 1 - 19 - B4B		
							Packaging 1 - 20 - B4B		
							Packaging 1 - 21 - B4B		
							Packaging 1 - 22 - B4B		
							Packaging 1 - 23 - B4B		
							Packaging 1 - 24 - B4B		
							Packaging 1 - 25 - B4B		
							Packaging 1 - 26 - B4B		
							Packaging 1 - 27 - B4B		
							Packaging 1 - 28 - B4B		

BB 1/3/2019



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CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
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Container No: S169359



Part: D407-667-105

Job No: 186544

Serial No/Batch: S169359

Revision: D/D

Inspector:

Exp Date:

Instructions: TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAI

D407-667-105/186544/S169359



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Container No: S169359



Part: D407-667-105

Job No: 186544

Serial No/Batch: S169359

Revision: D/D

Inspector:

Exp Date:

Instructions: TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAP/

				Packaging 1 - 29 - B4B	
				Packaging 1 - 30 - B4B	
				Packaging 1 - 31 - B4B	
				Packaging 1 - 32 - B4B	
				Packaging 1 - 33 - B4B	
				Packaging 1 - 34 - B4B	
				Packaging 1 - 35 - B4B	
				Packaging 1 - 36 - B4B	
120	Crosstubes - Bend - 2 - B4B	1 pcs	12/14/18	3.77 2.50	Crosstubes - Bend - B4B
130	QC 15	1 pcs	12/14/18	0.00 0.00	QC 15 - 12
					QC 15 - 3
					QC 15 - 38
					QC 15 - 47
					QC 15 - 49
					QC 15 - 58
					QC 15 - 9
140	Crosstubes - 2 - B4B	1 pcs	12/14/18	0.00 1.28	Crosstubes - 1 - B4B
					Crosstubes - 2 - B4B
					Crosstubes - 3 - B4B
					Crosstubes - 4 - B4B
					Crosstubes - 5 - B4B
					Crosstubes - 6 - B4B
150	Crosstubes - 3 - B4B	1 pcs	12/14/18	0.00 0.36	Crosstubes - 1 - B4B
					Crosstubes - 2 - B4B
					Crosstubes - 3 - B4B
					Crosstubes - 4 - B4B
					Crosstubes - 5 - B4B
					Crosstubes - 6 - B4B
160	QC 5	1 pcs	12/14/18	0.00 0.00	QC 5 - 10
					QC 5 - 12
					QC 5 - 17
					QC 5 - 18
					QC 5 - 19
					QC 5 - 22
					QC 5 - 24
					QC 5 - 3
					QC 5 - 38
					QC 5 - 42
					QC 5 - 43
					QC 5 - 49
					QC 5 - 51
					QC 5 - 58
					QC 5 - 68
					QC 5 - 9
					QC 5 - 50
					QC 5 - 30
170	QC 7	1 pcs	12/14/18	0.00 0.00	QC 7 - 10
					QC 7 - 13
					QC 7 - 14
					QC 7 - 15
					QC 7 - 17
					QC 7 - 18
					QC 7 - 19
					QC 7 - 2
					QC 7 - 28
					QC 7 - 3
					QC 7 - 30
					QC 7 - 34

DB 4/3/2019

APR 10 2019 P.D.

BB 4/12/2019

BB 4/12/2019

APR 15 2019 DAS 68 9-89

DAS 68 9-89

					QC 7 - 36	
					QC 7 - 37	
					QC 7 - 38	
					QC 7 - 41	
					QC 7 - 47	
					QC 7 - 48	
					QC 7 - 51	
					QC 7 - 58	
					QC 7 - 59	
					QC 7 - 6	
					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	DAS APR 16 201968
					QC 7 - 50	9-89
					QC 7 - 67	
180	Outsource - 2 - NDT per QSI038	1 pcs	12/14/18		SKY002-VC	HN 2019-05-07
190	Packaging 2-1 - Receive - B4B	1 pcs	12/14/18	0.00 0.00	Packaging 2 - 1 - B4B	
					Packaging 2 - 2 - B4B	
					Packaging 2 - 3 - B4B	
					Packaging 2 - 5 - B4B	
					Packaging 2 - 4 - B4B	
					Packaging 2 - 6 - B4B	
					Packaging 2 - 7 - B4B	
					Packaging 2 - 8 - B4B	
					Packaging 2 - 9 - B4B	
					Packaging 2 - 10 - B4B	
					Packaging 2 - 11 - B4B	
					Packaging 2 - 12 - B4B	
					Packaging 2 - 13 - B4B	
					Packaging 2 - 14 - B4B	
					Packaging 2 - 15 - B4B	
					Packaging 2 - 16 - B4B	
					Packaging 2 - 17 - B4B	
					Packaging 2 - 18 - B4B	
					Packaging 2 - 19 - B4B	
					Packaging 2 - 20 - B4B	
					Packaging 2 - 21 - B4B	
					Packaging 2 - 22 - B4B	
					Packaging 2 - 23 - B4B	
					Packaging 2 - 24 - B4B	
					Packaging 2 - 25 - B4B	
					Packaging 2 - 26 - B4B	
					Packaging 2 - 27 - B4B	
					Packaging 2 - 28 - B4B	
					Packaging 2 - 29 - B4B	
					Packaging 2 - 30 - B4B	
					Packaging 2 - 31 - B4B	
					Packaging 2 - 32 - B4B	
					Packaging 2 - 33 - B4B	
					Packaging 2 - 34 - B4B	
					Packaging 2 - 35 - B4B	
					Packaging 2 - 36 - B4B	
200	QC 6	1 pcs	12/14/18	0.00 0.00	QC 6 - 38	
					QC 6 - 42	
					QC 6 - 9	
					QC 6 - 68	DAS MAY 08 201968
					QC 6 - 61	9-89
210	Spray Paint - 2 - B4B	1	12/14/18	0.00 0.25	Spray Paint - 1 - B4B	AB 19-5-6

	pcs			Spray Paint - 2 - B4B	
				Spray Paint - 3 - B4B	
				Spray Paint - 4 - B4B	
220 QC 14	1 pcs	12/14/18	0.00 0.00	QC 14 - 15	
				QC 14 - 2	
				QC 14 - 34	
				QC 14 - 38	
				QC 14 - 41	DAS
				QC 14 - 51	19
				QC 14 - 58	9-89
				QC 14 - 59	
				QC 14 - 9	
				QC 14 - 68	
230 Crosstubes - 4 - B4B	1 pcs	12/14/18	0.00 1.52	Crosstubes - 1 - B4B	
				Crosstubes - 2 - B4B	
				Crosstubes - 3 - B4B	
				Crosstubes - 4 - B4B	AS 19-5-10
				Crosstubes - 5 - B4B	
				Crosstubes - 6 - B4B	
240 QC 5	1 pcs	12/14/18	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 38	
				QC 5 - 42	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	DAS
				QC 5 - 68	MAY 15 2019 68
				QC 5 - 9	9-89
				QC 5 - 50	
				QC 5 - 30	
250 Packaging 1-1 - Pick Kit - B4B	1 pcs	12/14/18	0.00 0.00	Packaging 1 - 1 - B4B	
				Packaging 1 - 2 - B4B	
				Packaging 1 - 3 - B4B	
				Packaging 1 - 4 - B4B	
				Packaging 1 - 5 - B4B	
				Packaging 1 - 6 - B4B	
				Packaging 1 - 7 - B4B	
				Packaging 1 - 8 - B4B	
				Packaging 1 - 9 - B4B	
				Packaging 1 - 10 - B4B	
				Packaging 1 - 11 - B4B	
				Packaging 1 - 12 - B4B	
				Packaging 1 - 13 - B4B	
				Packaging 1 - 14 - B4B	
				Packaging 1 - 15 - B4B	
				Packaging 1 - 16 - B4B	
				Packaging 1 - 17 - B4B	
				Packaging 1 - 18 - B4B	
				Packaging 1 - 19 - B4B	
				Packaging 1 - 20 - B4B	
				Packaging 1 - 21 - B4B	
				Packaging 1 - 22 - B4B	

				Packaging 1 - 23 - B4B	
				Packaging 1 - 24 - B4B	
				Packaging 1 - 25 - B4B	
				Packaging 1 - 26 - B4B	
				Packaging 1 - 27 - B4B	
				Packaging 1 - 28 - B4B	
				Packaging 1 - 29 - B4B	
				Packaging 1 - 30 - B4B	
				Packaging 1 - 31 - B4B	
				Packaging 1 - 32 - B4B	
				Packaging 1 - 33 - B4B	
				Packaging 1 - 34 - B4B	
				Packaging 1 - 35 - B4B	
				Packaging 1 - 36 - B4B	
260	QC 4	1 pcs	12/14/18	0.00 0.00	QC 4 - 26
					QC 4 - 28
					QC 4 - 38
					QC 4 - 42
					QC 4 - 58
					QC 4 - 6
					QC 4 - 69
					QC 4 - 9
					QC 4 - 46
265	DC - 1 - B4B	1 pcs	12/14/18	0.00 0.00	DC - 1 - B4B
					DC - 2 - B4B
270	Packaging 3-1 - Stock - B4B	1 pcs	12/14/18	0.00 0.00	Packaging 3 - 1 - B4B
					Packaging 3 - 2 - B4B
					Packaging 3 - 3 - B4B
					Packaging 3 - 4 - B4B
					Packaging 3 - 5 - B4B
					Packaging 3 - 6 - B4B
					Packaging 3 - 7 - B4B
					Packaging 3 - 8 - B4B
					Packaging 3 - 9 - B4B
					Packaging 3 - 10 - B4B
					Packaging 3 - 11 - B4B
					Packaging 3 - 12 - B4B
					Packaging 3 - 13 - B4B
					Packaging 3 - 14 - B4B
					Packaging 3 - 15 - B4B
					Packaging 3 - 16 - B4B
					Packaging 3 - 17 - B4B
					Packaging 3 - 18 - B4B
					Packaging 3 - 19 - B4B
					Packaging 3 - 20 - B4B
					Packaging 3 - 21 - B4B
					Packaging 3 - 22 - B4B
					Packaging 3 - 23 - B4B
					Packaging 3 - 24 - B4B
					Packaging 3 - 25 - B4B
					Packaging 3 - 26 - B4B
					Packaging 3 - 27 - B4B
					Packaging 3 - 28 - B4B
					Packaging 3 - 29 - B4B
					Packaging 3 - 30 - B4B
					Packaging 3 - 31 - B4B
					Packaging 3 - 32 - B4B
					Packaging 3 - 33 - B4B
					Packaging 3 - 34 - B4B

MAY 23 2019

DAS
58
9-89

DAS
21
9-89

MAY 24 2019

MAY 23 2019

DAS
58
9-89

				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
280 QC 21 - FG	1	12/14/18	0.00 0.00	QC 21 - FG - 21	DAS
	pcs			QC 21 - FG - 70	21 9-89

MAY 24 2019

Part Op 110 - Pick Kit

Descriptions: 120 - CNC Alpha 160 Bender - Bend tube as per Dwg D407-667-145 using CNC bender program 407-fw

130 - QC15- Crosstube Dimensional Check

140 - Crosstubes ***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** , VERIFIED

BY: ***** 1- Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D407-667-145. Drill all (3) top holes. Holes facing inboard. 2- Drill Fwd rivet holes using drill Jig DT8787 fwd as per Dwg D407-667-145. 3- C'sink holes as per Dwg D407-667-145. Allow rivet to sit below surface to compensate for paint. 4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins .Drill ONLY 2 top holes ONLY plug most bottom holes to prevent accidental drilling. 5- Drill holes and ream using drill Jig DT8541 & DT8542 as per Dwg D407-667-145. Drill only the top (2) holes. 6- Drill Aft rivet holes using drill Jig DT8787 aft as per Dwg D407-667-145. 7- C'sink holes as per Dwg D407-667-145. Allow rivet to sit below surface to compensate for paint. 8- Scribe part # and batch # using vibrating stylus as per Dwg D407-667-145 9- *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-145

150 - Crosstubes Chemical Conversion ***IMMEDIATELY AFTER GRINDING*** 1- PRESSURE WASH X-TUBE INSIDE AND OUT 2- ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT AS PER QSI005.

160 - QC5- Inspect part completeness to step on W/O

170 - QC7-Inspect Chemical Conversion Coat

180 - Outsource process - NDT per QSI038 4.1 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***
OUTSIDE SERVICE -CROSSTUBES Liquid Penetrant Inspection as per QSI 038 Or Level 2 Attach copy of NDT results to work order

190 - Receive & Inspect for Damage & Mat'l Certs *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***
Inspect for transit damage

200 - QC6- All purchased or subcontracted products *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***
Inspect for damage & ensure results are as per Dwg D206-667-145

210 - Spray Paint / NDT Room *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** **MASK AREA UNDER CLAMP PRIOR TO PAINTING AS PER DWG*** 1-Prime inside and outside crosstube as per QSI 005 4.2.1 *****Let tube sit up right for 30mins before hanging***** P4500-P-23 Base Batch: 5143304 P4500-C-23 Catalyst Batch: _____ Start time: _____ Finish: _____ *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1-Paint outside crosstube with White Imron as per QSI 005 4.2 Imron 55U white paint

Batch: 5173197 Imron 125S activator Batch: _____ Start: _____

220 - QC14- Inspect Spray Paint Then,Wrap in plastic bag to protect from scratches

230 - Crosstubes - INSTALL GROUNDING CLAMP AND SEAL WITH SIKAFLEX AS PER DWG A/R SIKAFLEX

BATCH: _____ 1-Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg 2-Install supports with Proseal 890 per D407-667-145 and QSI 015 A/R Proseal 890 Batch: 5146134 EXP: 10/19 3-Install supports clamps Using Dt9565 as per Dwg D407-667-145 ,Torque to 80-100 IN-LBS. Start: 19-5-10 Finish: 19-5-13 4-Install nut plates as per Dwg D407-667-145. Touch-up rivet heads with Imron paint.

240 - QC5- Inspect part completeness to step on W/O ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***

250 - Pick Kit

260 - QC4- 100% Inspect kits for completeness

265 - Document Control - Photocopy bluefile and create labels as per PPP D407-667-105 CHG005

270 - Identify and pack for shipping as per PPP D407-667-105 Location : FG097

280 - QC21- Final Inspection - Work Order Release

Job BOM					5146952
Part / Item	Component Name	Quantity	Operation	Container	
D407-667-105TRN	Crosstube Turning Detail	1 Ea (1 ea)	110-Packaging 1 - Pick Kit		5150571
D2873-043	Nut Plate Assembly	2 Ea (2 ea)	230-Crosstubes - 4 - B4B		
D2873-045	Nut Plate Assembly	2 pcs (2 ea)	230-Crosstubes - 4 - B4B		
D2891-1	Support 2.25	2 pcs (2 ea)	230-Crosstubes - 4 - B4B		
D3595-063-395	Rubber Cushion 0.63" Wide X 3.95" Long	4 pcs (4 ea)	230-Crosstubes - 4 - B4B		
MS20601-AD4W10	Rivet	14 Ea (14 ea)	230-Crosstubes - 4 - B4B		
MS21920-20	Clamp	4 Ea (4 ea)	230-Crosstubes - 4 - B4B		
AN742D36	Plain Clamp Loop	2 Ea (2 ea)	230-Crosstubes - 4 - B4B		
MS21042-3	Nut use MS21042L3 per QSI 017	2 Ea (2 ea)	230-Crosstubes - 4 - B4B		
MS27039-1-08	Screw	2 Ea (2 ea)	230-Crosstubes - 4 - B4B		
MS9165-05	Bracket	2 Ea (2 ea)	230-Crosstubes - 4 - B4B		
NAS1149C0332R	Washer	4 Ea (4 ea)	230-Crosstubes - 4 - B4B		
AN5-10A	Bolt	10 Ea (10 ea)	250-Packaging 1-1 - Pick Kit - B4B		5158586
AN5-30A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B		5104362
AN5-32A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B		5058983-3x2 5058983x2
MS21042L5	Nut	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B		5167653
NAS1149D0563J	Washer	18 Ea (18 ea)	250-Packaging 1-1 - Pick Kit - B4B		5174288

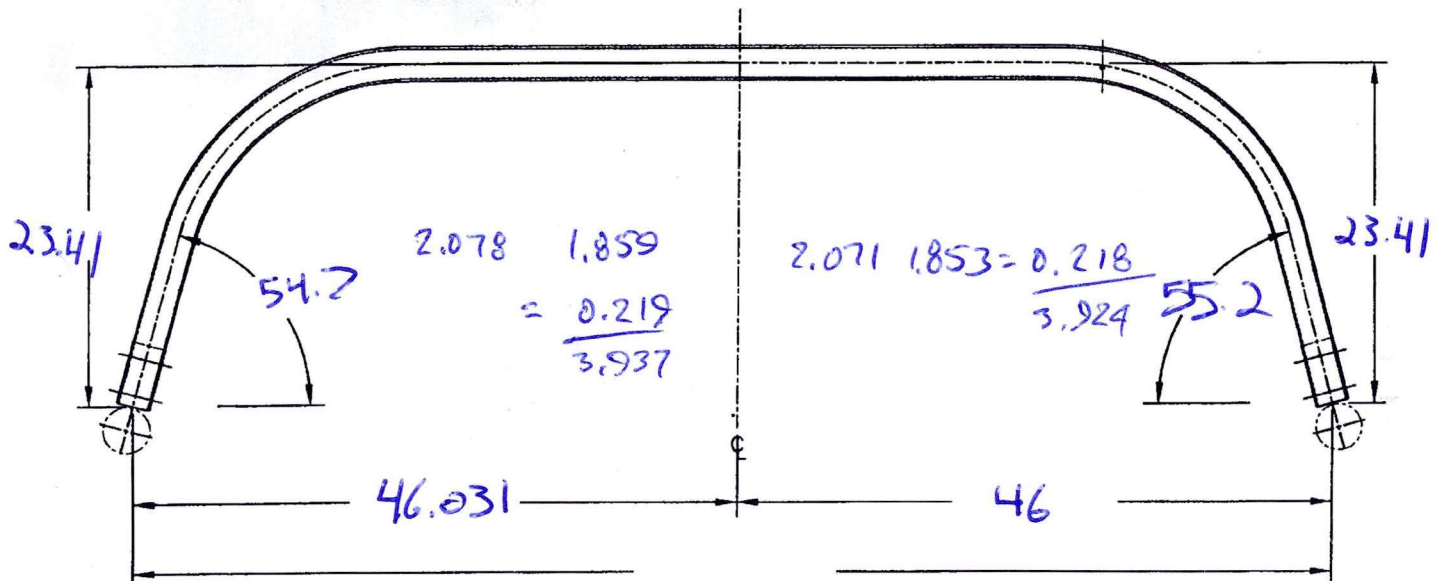
Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
110-Packaging 1 - Pick Kit	D407-667-105TRN	1	6	0
230-Crosstubes - 4 - B4B	AN742D36	2	39	0
	D2873-043 5145871	② 5133733	58	0
	D2873-045 5159706	②	32	0
	D2891-1 5171174	②	12	0
	D3595-063-395 5056688	④	91	0
	MS20601-AD4W10 5036481	⑭	302	0
	MS21042-3	2	221	0
	MS21920-20 5103843	④	143	0
	MS27039-1-08	2	507	0
	MS9165-05	2	25	0
	NAS1149C0332R	4	3,259	0
250-Packaging 1-1 - Pick Kit - B4B	AN5-10A	10	194	0
	AN5-30A	4	59	0
	AN5-32A	4	453	0
	MS21042L5	4	306	0
	NAS1149D0563J	18	1,027	0

Part Specifications

Specifications could not be found.

DART AEROSPACE LTD	Work Order:	
Description: Crosstube High Fwd (407)	Part Number:	D407-667-105
Inspection Dwg: D407-667-145 Rev: C		Page 1 of 1

Required Dimension	Min	Max
Height	23.41	23.67
1/2 Span	45.81	46.07
Angle	54	56
Total Span	91.62	92.14
Bending Passes	6	--
Crushing	--	6%



	Side A	Side B
Bending Passes		
Crushing	5.6%	5.6%
Comments		

QC15 Inspection	DAS
Date	APR 10 2019 68
	9-89

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.12	Dimensions updated per Dwg Rev C	KJ	
C	12.04.16	Added bending, crushing dimensions	KJ	
D	12.10.30	Revised Total Span dimensions & Dwg Rev	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																							
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																																																												
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																												
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																												
Large Fab ☐	Composite ☐	Supplier ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																								
Description Work Order Deviation				Disposition				Completed By																																																							
								Lead hand / Supervisor Approval Verification																																																							
								QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
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																								OTHER :																																							

Item	Qty -145	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2
10	2	AN742D36	CLAMP
11	2	MS9165-05	ANGLE BRACKET
12	2	MS21042L3	NUT (OR MS21042-3)
13	2	MS27039-1-08	SCREW
14	4	NAS1149C0332R	WASHER (OR AN960C10L)

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6010-115
FINISHED LENGTH = 113.20±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 17.8 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- TO INSTALL D2891-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- MASK AREA UNDER CLAMP PRIOR TO PAINTING.
- SEAL EDGES WHERE AN742D36 CLAMP MEETS WITH THE CROSSTUBE USING SIKAFLEX-241/-291 OR MIL-S-8802 CLASS B2 OR PROSEAL 890 SEALANT.
- PERFORM RESISTANCE CHECK TO ENSURE MAX RESISTANCE IS 10 MEGOHMS.

RELEASED

2018 SEP 06
2018-777

D	REVISE SHEET 2 ASSEMBLY DETAIL HOLE PATTERN PER CAR18-221. UPDATE PARTS LIST AND GENERAL NOTES 12 & 15 TO INCORPORATE DEO C-1. ADD ITEMS 10-14 TO PARTS LIST, ADD GENERAL NOTES 16-18 AND ADD SHEET 5 TO INCORPORATE DEO C-2.	JMH	18.05.01
C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2858-400-694 (ZN D6-2 & A5-2); REMOVED REF. 7 ADD TOLERANCES (ZN C6-3, C4-3, D2-3); RELOCATED FLAG #6 (ZN A6-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	02.05.08
REV.	DESCRIPTION	BY	DATE
DESIGN	JF	DART AEROSPACE LTD	
DRAWN	JMH	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ZF	DRAWING NO.	REV. D
MFG. APPR.	AFB	D407-667-145	SHEET 1 OF 5
APPROVED	NO	TITLE	SCALE
DE APPR.	JF	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	18.05.01	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
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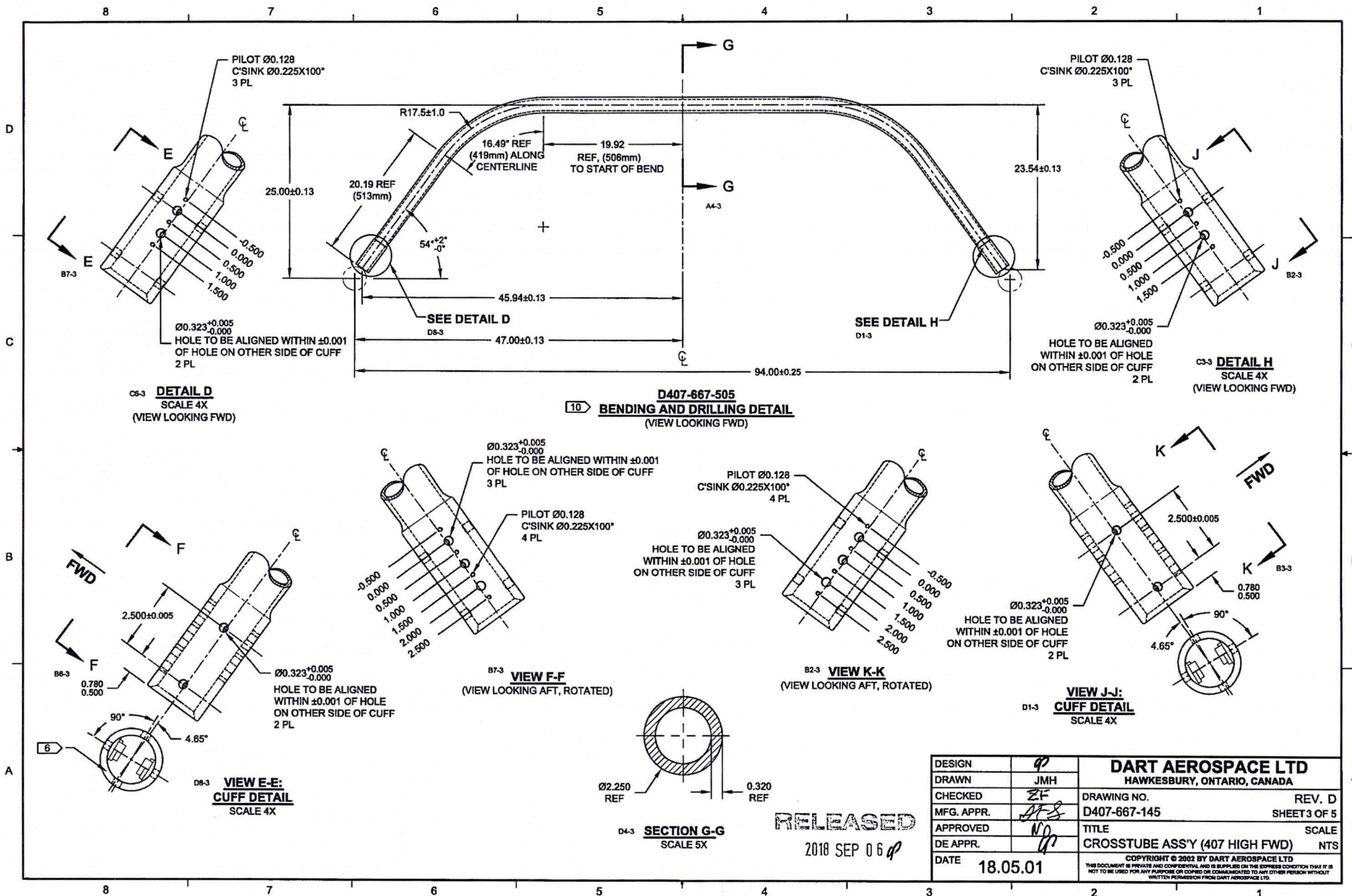


WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

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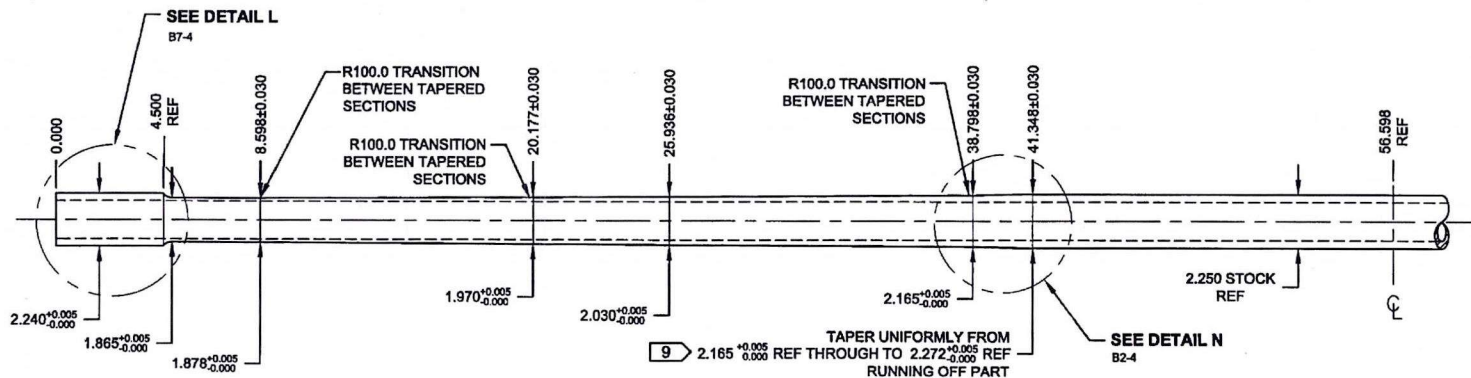


WORK ORDER NON-CONFORMANCE / UPDATE

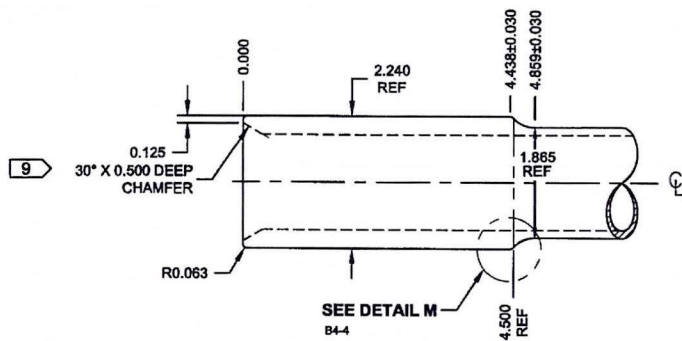
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Work Order update only ☐

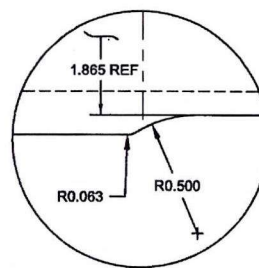
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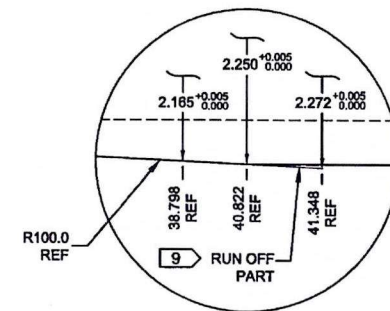
TURNING DETAIL



DETAIL L:
D7-4 **CROSSTUBE CUFF**
NOT TO SCALE



DETAIL M:
B6-4 **CUFF TRANSITION**
NOT TO SCALE



DETAIL N:
C3-4 **TAPER RUN-OFF**
NOT TO SCALE

RELEASED

2018 SEP 06

DESIGN	9P	DART AEROSPACE LTD	
DRAWN	JMH	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ZF	DRAWING NO.	REV. D
MFG. APPR.	AFB	D407-667-145	SHEET 4 OF 5
APPROVED	N/A	TITLE	SCALE
DE APPR.	9P	CROSSTUBE ASSY (407 HIGH FWD)	NTS
DATE	18.05.01	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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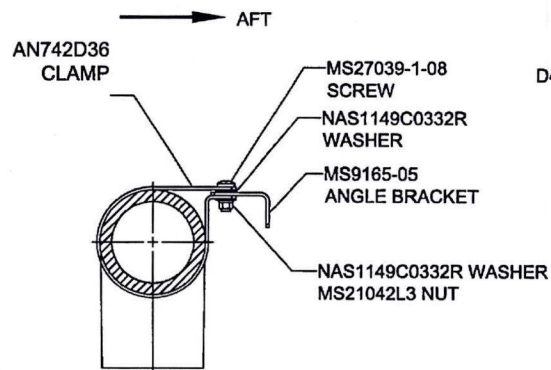


WORK ORDER NON-CONFORMANCE / UPDATE

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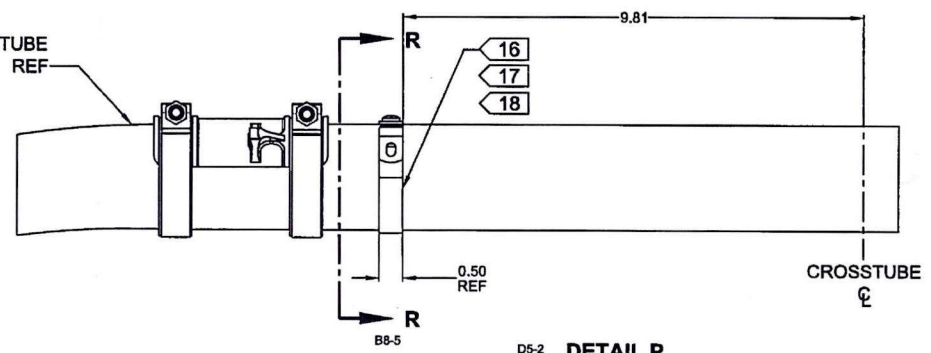
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				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					



C4-5 **SECTION R-R**

D407-667-505 CROSSTUBE REF



D5-2 **DETAIL P**
 BONDING STRAP INSTALLATION 2 PL

RELEASED
 2018 SEP 06

DESIGN	4P	DART AEROSPACE LTD	
DRAWN	JMH	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ZF	DRAWING NO.	REV. D
MFG. APPR.	AFB	D407-667-145	SHEET 5 OF 5
APPROVED	ND	TITLE	SCALE
DE APPR.	4P	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	18.05.01	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

QA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB043372



Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

Attention: Jenne, Heather

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB043372

PO Date: 5/3/19

Due Date: 5/7/19

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Phone:

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	187116	D4883-7	End Fitting : Various STC's Outsource process - NDT per QSI038 4.1 Issue P/O: LPI Per ASTM 1417 LEVEL 2 Certificate of conformaty is required.	Firmed	-	5/7/19	6 pcs	0 pcs	6 pcs	\$18.50/pcs	\$111.00
							6 X MAY 07 2019				
2	187764	D4884-3	End Fitting, Eye : Various STC's Outsource process - NDT per QSI038 4.1	Firmed	-	5/7/19	6 pcs	0 pcs	6 pcs	\$18.50/pcs	\$111.00
							6 X MAY 07 2019				
3	192351	D407-667-105	Fwd Crosstube - High 407 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** OUTSIDE SERVICE -CROSSTUBES Liquid Penetrant Inspection as per QSI 038 Or Level 2 Attach copy of NDT results to work order	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
							1 X MAY 07 2019				
	186544			Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	186545			Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	186546			Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
Sub Total:							4	0	4		\$444.00

DAS
68
9.89



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB043372



Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
4	194162	D212-664-101	Fwd Crosstube - High : TC STC SH01-9 Issue 3, FAA STC SR01298NY 09/01/08, EASA STC EASA.IM.R.S.01304 07/03/06, DGAC MEXICO STC IA-316/2015 15/06/17 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194167		<i>1 X</i> MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194161		<i>1 X</i> MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194164		<i>1 X</i> MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
Sub Total:							4	0	4		\$444.00
5	192361	D407-667-205	Aft Crosstube - High 407 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038O	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194110		<i>1 X</i> MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
	194111		<i>1 X</i> MAY 07 2019	Firmed	-	5/7/19	1 pcs	0 pcs	1 pcs	\$111.00/pcs	\$111.00
Sub Total:							3	0	3		\$333.00
Grand Total:										\$1,443.00	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB043372



Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 5/7/19 10:43 AM Dart.Guerin.Kimberley

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO40272	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: POHB043372 ✓
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:**CARRY OUT NDT ON:**

- ✓ 4 FWD CROSSTUBES, P/N# D407-667-105, J/S# 192351, 186544, 186545, 186546
✓ 4 FWD CROSSTUBES, P/N# D212-664-101, J/S# 194161, 194162, 194164, 194167
✓ 3 AFT CROSSTUBES, P/N# D407-667-205, J/S# 194110, 192361, 194111
✓ 6 END FITTINGS, P/N# D4883-7, J/S# 187116
✓ 6 END FITTING EYE, P/N# D4884-3, J/S# 187764 ✓

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-16						MAY 03 2019	 DOT-APP 20 53-89
NO CRACK FOUND							
PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923, DEV. MPO11715, UV LIGHT M-20142							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp DOT-APP 20 53-89	Date: MAY 03 2019
Name: RAFIK MELIKIAN		

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
		X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
			X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
				X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
					X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
						X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1	1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2		1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3			1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4				1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5					1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6						1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10	*2	*2	*2		*2		D2891-1	SUPPORT
11				*2			D2892-1	SUPPORT
12						*1	D2894-1	SUPPORT
13	*4	*4	*4		*4		D3595-063-395	RUBBER CUSHION
14				*4			D3595-063-450	RUBBER CUSHION
15						*2	D3595-075-430	RUBBER CUSHION
16	*4	*4	*4		*4		MS21920-20	CLAMP
17				*4		*4	MS21920-22	CLAMP
18						*2	MS21920-25	CLAMP (OR MS21920-24)
19	4	4	4		4		AN5-32A	BOLT
20				4		4	AN5-34A	BOLT
21	4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22	8	8	8	8	8	8	NAS1149C0563J	WASHER (OR AN960JD516)
23						*2	D3190-1	CHAFING SHIELD
40	*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41	*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42		2					D2872-043	NUT PLATE
43		2					D2872-045	NUT PLATE
44	10		10				AN5-7A	BOLT
45		10		10	10	10	AN5-10A	BOLT
46	4	10	4		4		AN5-30A	BOLT
47				4		4	AN5-32A	BOLT
48			12				AN970-4	WASHER (OPTIONAL)
49		6					MS21042L5	NUT (OR MS21042-5)
50	10	12	10	10	10	10	NAS1149C0563J	WASHER (OR AN960JD516)
60		1					D3039-3	CENTER DRILL (TOOLING, NOT INSTALLED)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/-143/-241/-243 & D407-667-145/-245
ASSEMBLIES ABOVE

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Revision: D
Date: 11.05.01

Change Record

PAGE 1 OF 1

Part Number: D407-667-105Description: CROSSTUBE INSTALLATION, 407 HIGH FWD[illegible]